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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER	
THOMPSON, JAMES A	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/739,682	NAKAMURA, HIROAKI	
	Examiner	Art Unit	
	James A. Thompson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 29 March 2006 have been fully considered but they are not persuasive.

Regarding page 9, lines 10-14: Since Applicant still uses the recitation "compression characteristic" in the presently amended independent claims, Examiner's comments in the previous office action, dated 20 December 2005 and mailed 29 December 2005, relating to the difference between "compression characteristic" and "compression data" are still relevant with respect to the present claims. As stated in said previous office action, a compression characteristic is a much broader concept that the more narrowly defined compression amount. A compression amount is the specifically defined numerical amount by which data is compressed. A compression *characteristic*, on the other hand, is simply a feature that helps to identify, describe or otherwise delineate the compression that is to be performed.

Regarding page 9, line 15 to page 11, line 19: Kishida (US Patent 5,287,418) and Takeo (US Patent 5.796,870) are clearly combinable. Firstly, both reference are from the same field of endeavor, namely the adjustment of gradation characteristics between digital image input and digital image output devices, so as to provide an optimal result on the digital image output device, as clearly set forth on the last three lines of page 5 to page 6, line 2 of said previous office action. Kishida and Takeo do not relate to fundamentally different characteristics. Both Kishida and Takeo operate on digital image data. Takeo is simply directed to image data that is obtained from a different source, namely x-ray images. This is in no way a fundamental

difference. Both Kishida and Takeo scan in digital image data and perform conversion operations on the digital image data. Takeo is merely directed to a different intended use than Kishida, but there is nothing in the teachings of Takeo that would render Kishida inoperative, nor is there anything in Takeo that would change the principle of operation of Kishida. Applicant's contention that Takeo processes each pixel individually is also unfounded. Takeo states that "the dynamic range of the entire image is compressed" [column 2, lines 44-45 of Takeo, as cited by Applicant]. Likewise, in Kishida, the tone conversion is performed to the entire image. Finally, Applicant's contention that Takeo would be too complicated to apply to Kishida is merely an assertion, and even if *arguendo* such an assertion were true, it does not render the combination unsatisfactory for its intended purpose. Even if the combination of Kishida and Takeo did not perform at utmost efficiency, the combination still functions and is satisfactory for its intended purpose.

Regarding page 11, line 20 to page 12, line 12: The first step of the operations in Kishida is the preparation and storage of a plurality of reference tone curves (figure 2(S1) and column 3, lines 16-21 of Kishida, as cited in said previous office action). Thus, the basic gradation conversion characteristics are indeed preliminarily set. By combination with Takeo, said basic gradation conversion characteristics are specifically compression and/or expansion characteristics. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, there is clear suggestion to combine the references in the

manner set forth in said previous office action, namely that gradation compression and expansion of the image data is simply a specific type of gradation conversion. In other words, Takeo teaches a specific manner of gradation conversion, whereas Kishida teaches the more general gradation conversion. Whether this is considered an "apparent benefit" or not, the standard of obviousness requires that there be a motivation (which, presumably, is the "apparent benefit" to which Applicant refers) or a suggestion to combine the references. In the present case, there is a suggestion that one of ordinary skill in the art at the time of the invention would have had to combine the references.

Regarding page 12, lines 13-20: Firstly, Examiner has not "re-raised the issue" of well-known prior art. Official Notice was taken with respect to the film types and film sizes in the first non-final rejection, dated 21 July 2004 and mailed 29 July 2004. Since Applicant did not timely respond to the Official Notice, it is considered accepted by Applicant that the prior art set forth in the Official Notice is indeed old, well-known, and expected in the art (see §MPEP 2144.03(C)). Applicant's filing of an RCE, and Examiner's subsequent non-final rejection, does not in any way "re-raise the issue". Furthermore, the suggestion to combine the references was also clearly set forth in said previous office action, namely that the film types and film sizes are all standard and common sizes of film used to produce printed images. Clearly, one of ordinary skill in the art would prefer to use standard film types and film sizes since standard film types and film sizes are cheaper and more readily available than custom-made film types and film sizes. These are such abundantly apparent benefits of using standard types and

sizes that additional comments beyond the fact that said types and sizes are standard and common are extremely superfluous.

Regarding page 13, lines 1-11: Claims 22-23 have been fully considered by Examiner and are addressed in detail below. With respect to claims 20-21, Applicant is reminded that claims are given their broadest reasonable interpretation consistent with the specification (see MPEP §2111). Furthermore, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 20 recites that "the input/output relationship of the image [now recited 'luminance'] data is defined on at least one side of an upper level and a lower level side of a predetermined level for an input value of the image [now recited 'luminance'] data". The recited claim language is taught by Kishida, as set forth on page 16, lines 6-13 of said previous office action. While the teachings of Kishida may not precisely correspond with what is disclosed in the specification, such is not the standard applied to claim language.

Regarding page 13, lines 12-15: The present amendments to the claims are taught by the prior art, as set forth in detail below. Any new grounds of rejection have been necessitated by the present amendments to the claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3 and 5-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishida (US Patent 5,287,418) in view of Tamura (US Patent 5,517,333).

Regarding claim 1: Kishida discloses preliminarily setting a plurality of basic gradation conversion characteristics for a gradation conversion of image data (figure 2(S1) and column 3, lines 16-21 of Kishida), each characteristic representing an input/output relationship of the luminance data (figure 3("INPUT DENSITY","OUTPUT DENSITY") and column 3, lines 22-28 of Kishida) created from the image data (figure 3 and column 22-28 of Kishida); selecting one or more basic gradation conversion characteristics from said plurality of gradation conversion characteristics (figure 2(S2); figure 4; and column 3, lines 36-42 of Kishida); and converting the gradation of said image data using the thus selected one or more basic gradation conversion characteristics (figure 2(S3-S4) and column 4, lines 47-56 of Kishida).

Kishida does not disclose expressly that said basic gradation conversion characteristics are specifically basic compression characteristics and/or basic expansion characteristics; and that the luminance data is low-pass filtered.

Tamura discloses setting a plurality of basic compression and/or basic expansion characteristics for a gradation curve of image data (figure 5 and column 8, lines 14-30 of Tamura). By selection one of a plurality of preset correction coefficients, the particular shape of the gradation correction curve (figure 5 of Tamura) is determined (column 8, lines 14-30 of Tamura). The shape of the gradation correction curve determines how the image data is compressed or expanded in each particular luminance level region.

Tamura further discloses low-pass filtering luminance data created from image data (column 8, line 61 to column 9, line 6 of Tamura).

Kishida and Tamura are combinable because they are from the same field of endeavor, namely the adjustment of gradation characteristics between digital image input and digital image output devices, so as to provide an optimal result on the digital image output device. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to compress or expand the dynamic range of the image data and low-pass filter the luminance data, as taught by Tamura, wherein a plurality of said basic compression characteristics or basic expansion characteristics taught by Takeo are preliminarily set, as taught by Kishida. The suggestion for doing so would have been compressing and expanding the dynamic range of the image data, as taught by Tamura, is simply a specific type of the gradation conversion taught by Kishida. By combining Tamura with Kishida, the system of Kishida thus performs a specific kind of gradation conversion, namely compression and/or expansion, based on the teachings of Tamura. Furthermore, the gradation correction performed by Tamura provides an improved resultant image since the gradation

correction is performed based on input image feature quantities (column 2, lines 22-36 of Tamura). Therefore, it would have been obvious to combine Tamura with Kishida to obtain the invention as specified in claim 1.

Regarding claim 2: Kishida in view of Tamura discloses that said plurality of basic compression characteristics or basic expansion characteristics are preliminarily set in accordance with at least one of an original type, an original size, and an analysis result of said image data (column 3, lines 28-36 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by combination.

Regarding claim 3: Kishida in view of Tamura discloses that said one or more of said plurality of basic compression characteristics or said plurality of basic expansion characteristics are selected in accordance with at least one of an original type, an original size, and an analysis result of said image data (figure 4 and column 3, lines 41-47 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 5: Kishida in view of Tamura discloses that one or more basic compression characteristics or basic expansion characteristics are selected (column 3, lines 36-42 of Kishida) by a manual operation (figure 4 and column 3, lines 48-54 of Kishida). As demonstrated above in the arguments regard-

ing claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 6: Kishida in view of Tamura discloses that said basic compression characteristics or basic expansion characteristics are provided as a parameter or a look-up table (figure 4 and column 3, lines 32-36 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 7: Kishida in view of Tamura discloses analyzing said image data (column 3, lines 36-42 of Kishida); setting a processing condition for compressing or expanding the gradation of said image information using said selected one or more basic compression characteristics or basic expansion characteristics in accordance with said analysis result (column 3, lines 36-42 of Kishida); and processing said image data in accordance with the thus set processing condition (column 4, lines 48-56 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 8: Kishida in view of Tamura discloses setting a processing condition for compressing or expanding the gradation of said image information using said selected one or more basic compression characteristics or basic expansion chara-

cteristics (column 3, lines 36-42 of Kishida) by a manual operation (figure 4 and column 3, lines 48-54 of Kishida); and processing said image data in accordance with the thus set processing condition (column 4, lines 48-56 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 9: Kishida discloses that said processing condition is set as a look-up table (column 4, lines 52-56 of Kishida).

Regarding claim 10: Kishida discloses preliminarily setting a plurality of basic gradation conversion characteristics for a gradation conversion of image data (figure 2(S1) and column 3, lines 16-21 of Kishida), each characteristic representing an input/output relationship of the luminance data (figure 3("INPUT DENSITY","OUTPUT DENSITY") and column 3, lines 22-28 of Kishida) created from the image data (figure 3 and column 22-28 of Kishida); selecting one or more basic gradation conversion characteristics from said plurality of gradation conversion characteristics (figure 2(S2); figure 4; and column 3, lines 36-42 of Kishida); analyzing image data (column 3, lines 36-42 of Kishida); setting a processing condition for converting the gradation of said image data using the thus selected one or more basic conversion characteristics in accordance with said analysis result obtained by thus analyzing the image data (column 3, lines 36-42 of Kishida); and processing said image data in accordance with the thus set processing condition (column 4, lines 48-56 of Kishida).

Kishida does not disclose expressly that said basic gradation conversion characteristics are specifically basic compression characteristics and/or basic expansion characteristics; and that the luminance data is low-pass filtered.

Tamura discloses setting a plurality of basic compression and/or basic expansion characteristics for a gradation curve of image data (figure 5 and column 8, lines 14-30 of Tamura). By selection one of a plurality of preset correction coefficients, the particular shape of the gradation correction curve (figure 5 of Tamura) is determined (column 8, lines 14-30 of Tamura). The shape of the gradation correction curve determines how the image data is compressed or expanded in each particular luminance level region.

Tamura further discloses low-pass filtering luminance data created from image data (column 8, line 61 to column 9, line 6 of Tamura).

Kishida and Tamura are combinable because they are from the same field of endeavor, namely the adjustment of gradation characteristics between digital image input and digital image output devices, so as to provide an optimal result on the digital image output device. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to compress or expand the dynamic range of the image data and low-pass filter the luminance data, as taught by Tamura, wherein a plurality of said basic compression characteristics or basic expansion characteristics taught by Takeo are preliminarily set, as taught by Kishida. The suggestion for doing so would have been compressing and expanding the dynamic range of the image data, as taught by Tamura, is simply a specific type of the gradation conversion taught by Kishida. By combining Tamura with Kishida, the system

of Kishida thus performs a specific kind of gradation conversion, namely compression and/or expansion, based on the teachings of Tamura. Furthermore, the gradation correction performed by Tamura provides an improved resultant image since the gradation correction is performed based on input image feature quantities (column 2, lines 22-36 of Tamura). Therefore, it would have been obvious to combine Tamura with Kishida to obtain the invention as specified in claim 10.

Regarding claim 11: Kishida discloses preliminarily setting a plurality of basic gradation conversion characteristics for a gradation conversion of image data (figure 2(S1) and column 3, lines 16-21 of Kishida), each characteristic representing an input/output relationship of the luminance data (figure 3("INPUT DENSITY","OUTPUT DENSITY") and column 3, lines 22-28 of Kishida) created from the image data (figure 3 and column 22-28 of Kishida); selecting one or more basic gradation conversion characteristics from said plurality of gradation conversion characteristics (figure 2(S2); figure 4; and column 3, lines 36-42 of Kishida); setting a processing condition for converting the gradation of said image data using the thus selected one or more basic conversion characteristics (column 3, lines 36-42 of Kishida) by a manual operation (figure 4 and column 3, lines 48-54 of Kishida); and processing said image data in accordance with the thus set processing condition (column 4, lines 48-56 of Kishida).

Kishida does not disclose expressly that said basic gradation conversion characteristics are specifically basic compression characteristics and/or basic expansion characteristics; and that the luminance data is low-pass filtered.

Tamura discloses setting a plurality of basic compression and/or basic expansion characteristics for a gradation curve of image data (figure 5 and column 8, lines 14-30 of Tamura). By selection one of a plurality of preset correction coefficients, the particular shape of the gradation correction curve (figure 5 of Tamura) is determined (column 8, lines 14-30 of Tamura). The shape of the gradation correction curve determines how the image data is compressed or expanded in each particular luminance level region.

Tamura further discloses low-pass filtering luminance data created from image data (column 8, line 61 to column 9, line 6 of Tamura).

Kishida and Tamura are combinable because they are from the same field of endeavor, namely the adjustment of gradation characteristics between digital image input and digital image output devices, so as to provide an optimal result on the digital image output device. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to compress or expand the dynamic range of the image data and low-pass filter the luminance data, as taught by Tamura, wherein a plurality of said basic compression characteristics or basic expansion characteristics taught by Takeo are preliminarily set, as taught by Kishida. The suggestion for doing so would have been compressing and expanding the dynamic range of the image data, as taught by Tamura, is simply a specific type of the gradation conversion taught by Kishida. By combining Tamura with Kishida, the system of Kishida thus performs a specific kind of gradation conversion, namely compression and/or expansion, based on the teachings of Tamura. Furthermore, the gradation correction performed by Tamura provides an improved resultant image since the gradation

correction is performed based on input image feature quantities (column 2, lines 22-36 of Tamura). Therefore, it would have been obvious to combine Tamura with Kishida to obtain the invention as specified in claim 11.

Regarding claim 12: Kishida discloses a selecting device (figure 4 of Kishida) for selecting one or more basic gradation conversion characteristics (figure 2(S2); and column 3, lines 36-42 of Kishida) from preliminarily set plurality of basic gradation conversion characteristics of image data (figure 2(S1) and column 3, lines 16-21 of Kishida) for use in gradation conversion of image data supplied by an image information supply source (column 4, lines 46-56 of Kishida), each characteristic representing an input/output relationship of the luminance data (figure 3("INPUT DENSITY","OUTPUT DENSITY") and column 3, lines 22-28 of Kishida) created from the image data (figure 3 and column 22-28 of Kishida); and an image processing device (figure 1(5) of Kishida) for converting the gradation of said image data using the thus selected one or more basic gradation conversion characteristics selected by said selecting device (figure 2(S3-S4) and column 4, lines 47-56 of Kishida).

Kishida does not disclose expressly that said basic gradation conversion characteristics are specifically basic compression characteristics and/or basic expansion characteristics; and that the luminance data is low-pass filtered.

Tamura discloses setting a plurality of basic compression and/or basic expansion characteristics for a gradation curve of image data (figure 5 and column 8, lines 14-30 of Tamura). By selection one of a plurality of preset correction coefficients, the particular shape of the gradation correction curve (figure 5 of Tamura) is determined (column 8, lines 14-30 of Tamura). The

shape of the gradation correction curve determines how the image data is compressed or expanded in each particular luminance level region.

Tamura further discloses low-pass filtering luminance data created from image data (column 8, line 61 to column 9, line 6 of Tamura).

Kishida and Tamura are combinable because they are from the same field of endeavor, namely the adjustment of gradation characteristics between digital image input and digital image output devices, so as to provide an optimal result on the digital image output device. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to compress or expand the dynamic range of the image data and low-pass filter the luminance data, as taught by Tamura, wherein a plurality of said basic compression characteristics or basic expansion characteristics taught by Takeo are preliminarily set, as taught by Kishida. The suggestion for doing so would have been compressing and expanding the dynamic range of the image data, as taught by Tamura, is simply a specific type of the gradation conversion taught by Kishida. By combining Tamura with Kishida, the system of Kishida thus performs a specific kind of gradation conversion, namely compression and/or expansion, based on the teachings of Tamura. Furthermore, the gradation correction performed by Tamura provides an improved resultant image since the gradation correction is performed based on input image feature quantities (column 2, lines 22-36 of Tamura). Therefore, it would have been obvious to combine Tamura with Kishida to obtain the invention as specified in claim 12.

Regarding claim 13: Kishida in view of Tamura discloses a setting section (figure 1(51) of Kishida) for analyzing the image data (column 3, lines 36-42 of Kishida) and setting a processing condition for compressing or expanding the gradation of said image data using said one or more basic compression characteristics or basic expansion characteristics selected by said selecting device in accordance with an analyzing result obtained by thus analyzing the image data (column 3, lines 36-42 of Kishida), wherein said image processing device processes said image data in accordance with the processing condition set by said setting section (column 4, lines 48-56 of Kishida). As demonstrated above in the arguments regarding claim 12, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 14: Kishida in view of Tamura discloses a setting section (figure 1(51) of Kishida) for setting a processing condition for compressing or expanding the gradation of said image data by a manual operation (figure 4 and column 3, lines 48-54 of Kishida) using said selected one or more basic compression characteristics or basic expansion characteristics selected by said selecting device (column 3, lines 36-42 of Kishida), wherein said image processing device processes said image data in accordance with the processing condition set by said setting section (column 4, lines 48-56 of Kishida). As demonstrated above in the arguments regarding claim 12, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics

taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 15: Kishida in view of Tamura discloses that said selecting device selects said one or more basic compression characteristics or basic expansion characteristics in accordance with at least one of an original type of an image as an image data source, and an original size of the image as an image data source (figure 4 and column 3, lines 41-47 of Kishida). As demonstrated above in the arguments regarding claim 12, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 16: Kishida in view of Tamura discloses selecting at least two of the basic compression characteristics and basic expansion characteristics as selected characteristic sets ($f_1(x)$ and $f_2(x)$) (column 4, lines 32-37 of Kishida) and cascading the selected characteristic sets (column 4, lines 38-41 and equation 2 of Kishida). Two curves ($f_1(x)$ and $f_2(x)$) are selected (column 4, lines 32-37 of Kishida) and used together through weighting to determine the appropriate tone curve ($f_d(x)$) (column 4, lines 38-41 and equation 2 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 17: Kishida in view of Tamura discloses that the preliminary setting of basic compression characteristics or basic expansion characteristics are preset in memory

(column 3, lines 19-21 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 18: Kishida in view of Tamura discloses that, in the selecting device, selecting one or more basic compression characteristics or basic expansion characteristics comprises selecting at least two of the basic compression characteristics and basic expansion characteristics as selected characteristic sets ($f_1(x)$ and $f_2(x)$) (column 4, lines 32-37 of Kishida) and cascading the selected characteristic sets (column 4, lines 38-41 and equation 2 of Kishida). Two curves ($f_1(x)$ and $f_2(x)$) are selected (column 4, lines 32-37 of Kishida) and used together through weighting to determine the appropriate tone curve ($f_d(x)$) (column 4, lines 38-41 and equation 2 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 19: Kishida in view of Tamura discloses a memory (figure 1(56) of Kishida), wherein the preliminary setting of basic compression characteristics or basic expansion characteristics are preset in the memory (column 3, lines 19-21 of Kishida). As demonstrated above in the arguments regarding claim 12, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and

basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Regarding claim 20: Kishida in view of Tamura discloses that the input/output relationship of the luminance data (figure 3("INPUT DENSITY","OUTPUT DENSITY") and column 3, lines 22-28 of Kishida) is defined on at least one side of an upper level and a lower level side of a predetermined level for an input value of the luminance data (figure 3($f_1(x)$,$f_d(x)$) of Kishida). The variable $f_1(x)$ is set on the upper side of $f_d(x)$. The variable $f_d(x)$ is calculated to determine the output color level (column 4, lines 38-41 of Kishida).

Kishida in view of Tamura further discloses that two basic compression or expansion characteristics are selected ($f_1(x)$ and $f_2(x)$) (column 4, lines 32-37 of Kishida), one of the two characteristics representing a relationship defined on either side of the upper level side or the lower level side (figure 3($f_1(x)$, $f_d(x)$) of Kishida), and another of the two characteristics representing a relationship defined on the other side (figure 3($f_2(x)$, $f_d(x)$) of Kishida). The variable $f_1(x)$ is set on the upper side of $f_d(x)$. The variable $f_2(x)$ is set on the lower side of $f_d(x)$. The variable $f_d(x)$ is calculated to determine the output color level (column 4, lines 38-41 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by the combination of Kishida in view of Tamura.

Further regarding claim 21: Kishida discloses that the two selected basic compression or expansion characteristics ($f_1(x)$ and $f_2(x)$) are cascaded to define the input/output relationship

($f_d(x)$) on both the upper level side and the lower level side of the predetermined level for the input value of the luminance data (column 4, lines 38-41 and equation 2 of Kishida). Two curves ($f_1(x)$ and $f_2(x)$) are selected (column 4, lines 32-37 of Kishida) and used together through weighting to determine the appropriate tone curve ($f_d(x)$) (column 4, lines 38-41 and equation 2 of Kishida).

Regarding claim 22: Kishida in view of Tamura discloses that said plurality of basic compression characteristics or basic expansion characteristics are preliminarily set (column 3, lines 28-36 of Kishida) in accordance with an original size (figure 5; column 3, lines 44-46; and column 4, lines 32-37 of Kishida). A background for an image is clearly covers a much larger image area than the main objective region (figure 5 of Kishida). The weights for the gradation correction curves are set in accordance with the fact that the background is large and the main objective region is small. Otherwise, the resultant tones would not be able to render well. Also, as demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by combination.

Further regarding claim 23: Tamura discloses that said plurality of basic compression characteristics or basic expansion characteristics are processed across an entire density range of the image data (figure 5 and column 5, lines 18-35 of Tamura).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kishida (US Patent 5,287,418) in view of Tamura (US Patent 5,517,333) and well-known prior art.

Regarding claim 4: Kishida in view of Tamura discloses that said plurality of basic compression characteristics or basic expansion characteristics are preliminarily set in accordance with at least one of an original type, an original size, and an analysis result of said image data (column 3, lines 28-36 of Kishida). As demonstrated above in the arguments regarding claim 1, the gradation conversion characteristics taught by Kishida correspond to the basic compression characteristics and basic expansion characteristics taught by Tamura, and are thus taught by combination.

Kishida in view of Tamura does not disclose expressly that said original type is at least one of a negative film, a reversal film, and a black-and-white film, and wherein said original size is at least one of a 135 size, a 240 size and a 120/220 size.

In the previous office action, dated 25 April 2005 and mailed 27 May 2005, and in the first office action, dated 21 July 2004 and mailed 29 July 2004, Official Notice was taken that the negative film, reversal film, and black-and white film types and the 135, 240 and 120/220 film sizes are old, well-known and expected in the art. Since no timely dispute has been filed, this is **now considered accepted by Applicant to be well-known prior art.** It would have been obvious to one of ordinary skill in the art to use as the original type at least one of a negative film, a reversal film, and a black-and-white film since negative film is a standard format used to process film images, a reversal film is a standard format for direct projection and

viewing of film images, and black-and-white film is gives clear images based on grayscale levels. All of these types of films are common types that can be used as hardcopy input types to be scanned. Further, it would have been obvious to one of ordinary skill in the art to use as the original size one of a 135 size, a 240 size, and a 120/220 size since said sizes are common sizes used to produce printed images.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tsuchiya et al, US Patent 6,768,514 B1, Patented 27 July 2004, Filed 17 November 1999.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
Technology Division 2625

08 June 2006

THOMAS D. LEE
PRIMARY EXAMINER